

AMENDMENTS TO THE CLAIMS

The listing of claims below replace all prior versions, and listings, of claims:

1 1. (Currently Amended) A method of determining performance of a
2 communications system, comprising:
3 storing representations of plural components of the communications
4 system, the components including a first packet-based network and at least one network
5 device;
6 assigning ~~one or more~~ performance parameters for each of the
7 components, the performance parameters comprising at least a first performance
8 parameter and a second performance parameter; and
9 combining the first performance parameters of respective components to
10 derive overall first performance parameters;
11 combining the second performance parameters of respective components
12 to derive an overall second performance parameter; and
13 deriving a quality indication of the communications system based at least
14 on the overall first and second performance parameters ~~of the components~~.

1 2. (Currently Amended) The method of claim 1, wherein the components
2 include a second packet-based network, the method further comprising assigning ~~one or~~
3 ~~more~~ performance parameters for the second packet-based network.

1 3. (Currently Amended) The method of claim 1, wherein assigning the ~~one or~~
2 ~~more~~ performance parameters includes assigning a packet delay parameter.

1 4. (Currently Amended) The method of claim 1, wherein assigning the ~~one or~~
2 ~~more~~ performance parameters includes assigning a packet loss parameter.

1 5. (Currently Amended) The method of claim 1, wherein assigning the ~~one or~~
2 ~~more~~ performance parameters includes assigning a packet jitter parameter.

1 6. (Original) The method of claim 1, wherein storing the representations
2 includes storing models of the plural components, the models capable of being linked to
3 create a representation of the communications system.

1 7. (Original) The method of claim 6, further comprising providing a
2 graphical user interface in which the models may be manipulated to create the
3 representation of the communications system.

1 8. (Original) The method of claim 1, wherein deriving the quality indication
2 includes calculating an E-model quality rating value.

1 9. (Original) The method of claim 1, further comprising combining the
2 representations of the plural components to create the communications system.

1 10. (Currently Amended) An apparatus for determining performance of a
2 communications system, comprising:
3 a storage device containing representations of plural components of the
4 communications system, the plural components including a packet-based network and at
5 least one network device, each of the components being assigned one or more
6 performance parameters; and
7 a controller to calculate a predicted quality of the communications system
8 based on the one or more performance parameters, wherein the predicted quality
9 comprises a value that is representative of a subjective perceived quality of
10 communications in the communications system by a user.

1 11. (Original) The apparatus of claim 10, wherein the one or more
2 performance parameters include a packet delay.

1 12. (Original) The apparatus of claim 11, wherein the packet delay of each
2 network component is treated as an independent variable.

1 13. (Original) The apparatus of claim 12, wherein the controller calculates an
2 overall packet delay of the communications system by summing the packet delays of the
3 plural components.

1 14. (Original) The apparatus of claim 10, wherein a first performance
2 parameter associated with each network component is treated as an independent variable.

1 15. (Original) The apparatus of claim 14, wherein a value of the overall first
2 performance parameter is derived by combining the first performance parameters of the
3 plural components.

1 16. (Original) The apparatus of claim 10, wherein the representation of the
2 packet-based network includes a representation of a collection of links and routers.

1 17. (Original) The apparatus of claim 10, wherein the representation of the
2 packet-based network includes a representation of an Internet Protocol network.

1 18. (Original) The apparatus of claim 10, wherein the packet-based network
2 includes a public network, and wherein the storage device further contains a
3 representation of a local network.

1 19. (Original) The apparatus of claim 10, wherein the storage device further
2 contains a representation of a circuit-switched device.

1 20. (Currently Amended) An article including one or more machine-readable
2 storage media containing instructions for modeling performance of a communications
3 system, the instructions when executed causing a controller to:
4 store models of plural components of the communications system, the
5 plural components including a packet-based network and at least one network device, the
6 stored models containing at least first performance parameters and second performance
7 parameters associated with respective components;

8 combine the models to represent the communications system; and
9 combine the first performance parameters of respective components to
10 derive an overall first performance parameter;
11 combine the second performance parameters of respective components to
12 derive an overall second performance parameter; and
13 determine a quality level of the communications system using at least the
14 ~~stored models~~ overall first performance parameter and overall second performance
15 parameter.

1 21. (Original) The article of claim 20, wherein the instructions when executed
2 cause the controller to derive an E-model rating using the stored models.

1 22. (Canceled) ✓

1 23. (Original) The article of claim 20, wherein the performance parameters are
2 associated with communications of packets through the communications system.

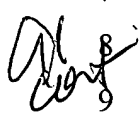
1 24. (Original) The article of claim 23, wherein the performance parameters
2 include at least one of a ~~packet~~ delay, packet loss, and packet jitter.

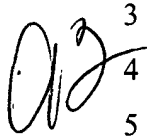
1 25. (Cancelled)

1 26. (Currently Amended) The article of claim ~~25~~20, wherein the performance
2 ~~parameter includes~~ parameters include at least one of a packet delay, packet jitter, and
3 packet loss.

1 27. (Currently Amended) A data signal embodied in a carrier wave and
2 including one or more code segments containing instructions for predicting performance
3 of a communications system, the instructions when executed causing a controller to:
4 assign ~~[[a]] performance parameters parameter~~ to each of plural
5 components in the communications system, the plural components including a packet-

6 based network, the performance parameters comprising packet loss, packet jitter, and
7 packet delay; and

8  derive a quality indication based on the packet losses, packet jitters, and
9 packet delays ~~performance parameters~~ of the plural components.

1 28. (New) The method of claim 1, wherein combining the first performance
2 parameters comprises combining packet delays of respective components to derive an
3 overall packet delay, and wherein combining the second performance parameters
4  comprises combining packet losses of respective components to derive an overall packet
5 loss.

1 29. (New) The method of claim 28, wherein the performance parameters
2 further comprise packet jitter, the method further comprising combining the packet jitters
3 of respective components to derive an overall packet jitter,
4 wherein deriving the quality indication is further based on the overall
5 packet jitter.

1 30. (New) The method of claim 1, further comprising assigning an audio
2 CODEC type parameter to at least one of the components,
3 wherein deriving the quality indication is further based on the audio
4 CODEC type parameter.

1 31. (New) The method of claim 1, further comprising assigning at least one of
2 a signal loss parameter, echo parameter, and noise parameter to at least another one of the
3 components,
4 wherein deriving the quality indication is further based on the at least one
5 of the signal loss parameter, echo parameter, and noise parameter.

1 32. (New) The method of claim 1, wherein deriving the quality indication
2 comprises deriving a mean opinion score (MOS).

1 33. (New) The method of claim 1, wherein deriving the quality indication
2 comprises deriving a value that is representative of a subjective perceived quality of
3 communications in the communications system by a user.

1 34. (New) The apparatus of claim 10, wherein the value comprises at least one
2 of an E-model quality rating value, mean opinion score (MOS), percentage of users that
3 view a connection as good or better, percentage of users that view a connection as poor or
4 worse, and percentage of connections that users may terminate early due to quality
5 problems.

1 35. (New) The apparatus of claim 10, wherein the performance parameters
2 comprise at least first and second performance parameters;
3 the controller to combine the first performance parameters of respective
4 components to derive an overall first performance parameter, and the controller to
5 combine the second performance parameters of respective components to derive an
6 overall second performance parameter, the controller to calculate the predicted quality
7 based at least on the overall first performance parameter and the overall second
8 performance parameter.

1 36. (New) The article of claim 20, wherein the quality level comprises a mean
2 opinion score (MOS).

1 37. (New) The data signal of claim 27, wherein deriving the quality indication
2 comprises deriving at least one of an E-model quality rating and a mean opinion score
3 (MOS).
